Using the Pleiades Front-End Load Balancer

To provide a load-balanced front-end environment for all Pleiades users, NAS provides a load-balancing tool that can automatically select the least-loaded Pleiades front-end system (PFE) when you log in. The system load is measured as a weighted function of disk, processor, and network loads.

To invoke the load balancer, log in via SSH using the special hostname **pfe** (or **pfe.nas.nasa.gov**) instead of a specific PFE (such as **pfe21**). The following sections describe in more detail how to invoke the load balancer when you log into a PFE.

TIP: If you need to log into the PFE that you most recently accessedâ for example, if you started a long-running process, such as a VNC session, on a particular PFEâ you can log back into the same one from any host by using the special hostname **pfe-last** (or **pfe-last.nas.nasa.gov**).
Note: While transfers using the **shiftc**, **scp**, **sftp**, and **rsync** commands will work normally with the load balancer, it is not possible to perform bbFTP transfers using this method (that is, using the hostnames **pfe** or **pfe-last**). Instead, you must select a specific PFE for the transfer (for example, **pfe21**).

Logging into a PFE in Two Steps

If you normally log into a PFE in two steps (first logging into an SFE, then logging into a PFE), simply use the **pfe** hostname in the second step to invoke the load balancer, as follows:

```
your_local_system% ssh username@sfeX (or ssh username@sfeX.nas.nasa.gov)
sfeX% ssh username@pfe (or ssh username@pfe.nas.nasa.gov)
```

where ***sfeX*** represents sfe[*6-9*].

You can also log into the last PFE you connected to via a particular SFE, as follows:

```
your_local_system% ssh username@sfeX (or ssh username@sfeX.nas.nasa.gov)
sfeX% ssh username@pfe-last (or ssh username@pfe-last.nas.nasa.gov)
```

You will be prompted for a password on the PFE selected by the load balancer.

Notes:

- If you have any issues connecting to one of the four SFEs, try connecting to a different one.
- ***username*** is your NAS login name. If you have the same username for your local system and the NAS systems, you can omit **username@** in the command line.

Logging into a PFE in One Step (Using SSH Passthrough)

If you normally log into a PFE using SSH Passthrough, follow these steps.

Before You Begin

Add the following entry in the **~/.ssh/config** file of your local system.

Notes:

- In this entry, the **ssh-balance** command is used instead of the **ssh-proxy** command, which is typically used for SSH passthrough. See line 2 below.
- The entry specifies **sfe6**, but you can use any of the four SFEs (sfe[*6-9*]).

```
Host pfe pfe-last pfe.nas.nasa.gov pfe-last.nas.nasa.gov
ProxyCommand ssh sfe6.nas.nasa.gov /usr/local/bin/ssh-balance %h
HostKeyAlias pfe21.nas.nas.gov
HostbasedAuthentication no
```

Or, if you use different usernames on your local system and on NAS systems:

```
Host pfe pfe-last pfe.nas.nasa.gov pfe-last.nas.nasa.gov
ProxyCommand ssh username@sfe6.nas.nasa.gov /usr/local/bin/ssh-balance %h
HostKeyAlias pfe21.nas.nas.gov
HostbasedAuthentication no
```

First-Time Login

The first time you invoke the load balancer using SSH passthrough, you will need to add **-o "StrictHostKeyChecking=ask"** to populate the host key, as follows:

```
your_local_system% ssh -o "StrictHostKeyChecking=ask" pfe (or pfe.nas.nasa.gov)
```

Subsequent Logins

Once the key is populated, you don't need to do it again the next time you log in. Simply run:

```
your_local_system% ssh pfe (or ssh pfe.nas.nasa.gov)
```

To connect to the last PFE you connected to, run:

```
your_local_system% ssh pfe-last (or ssh pfe-last.nas.nasa.gov)
```

Checking Which PFE the Load Balancer Will Select

You can find out which host will be selected by the load balancer, without actually logging in, by running the **ssh-balance** command with the **-l** option on any SFE or enclave system. For example:

```
sfeX% ssh-balance -l pfe
```

where ***sfeX*** represents sfe[*6-9*]. This command will return a fully-qualified PFE hostname.

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